

an <sup>2</sup>actuator attached to said resistance engine by a cable passing through said at least one adjustable arm assembly; and

positioning means for selectively rotating said at least one adjustable arm assembly and securing said at least one adjustable arm assembly in a desired position.

23. An exercise bench as defined in claim 22, wherein said positioning means is adapted to move to different positions in an approximately 180 degree horizontal arc with respect to said frame.

24. An exercise bench as defined in claim 22, wherein said frame further comprises a lateral support beam and said adjustable arm assembly is attached to said lateral support beam.

25. An exercise bench as defined in claim 22, wherein said at least one adjustable arm assembly is attached to said frame by a pivot structure.

26. An exercise bench as defined in claim 25, wherein said pivot structure is adapted to enable said at least one adjustable arm assembly to move in an approximately 180 degree horizontal arc with respect to said frame.

27. An exercise bench as defined in claim 25, wherein said pivot structure is oriented in a substantially vertical position.

28. An exercise bench as defined in claim 22, wherein said pivot structure is located adjacent a horizontal support surface.

29. An exercise bench as defined in claim 22, wherein said at least one adjustable arm assembly is positioned adjacent a horizontal support surface.

30. An exercise bench as defined in claim 22, wherein said at least one adjustable arm assembly further comprises an arm bracket, an end pulley bracket and a pivot mount attaching said adjustable arm assembly to said frame.

31. An exercise bench as defined in claim 30, wherein said arm bracket further comprises a side plate having a sloped top edge, a vertical side edge and a horizontal bottom edge.

32. An exercise bench as defined in claim 31, wherein said vertical side edge and said horizontal bottom edge are substantially open.

33. An exercise bench as defined in claim 30 wherein said pivot mount has an open channel for passing said cable from said actuator to said resistance engine.

34. An exercise bench as defined in claim 33, wherein said pivot mount is oriented in a substantially vertical orientation.

35. An exercise bench as defined in claim 30, wherein said end pulley bracket is pivotally attached to said arm bracket to rotate along a horizontal axis in an approximately 180 degree vertical arc.

36. An exercise bench as defined in claim 22, further comprising at least two adjustable arm assemblies.

37. An exercise bench as defined in claim 36, further comprising means for interconnecting said at least two adjustable arm assemblies to move upon the repositioning of one of said adjustable arm assemblies.

38. An exercise bench as defined in claim 37, wherein said means for interconnecting said at least two adjustable arm assemblies is a chain drive mechanism.

39. An exercise bench as defined in claim 22, wherein said positioning means further comprises a positioning plate having a plurality of holes formed therein and a pop-pin attached to said at least one adjustable arm assembly for engagement with said plurality of holes in said positioning plate.

40. A cable system for use in an exercise bench having a resistance engine, an arm assembly, an actuator, and a pulley system comprising:

a first portion of cable connected to said resistance engine and extending in a rearward direction from said resistance engine;

a second portion of cable extending in a first outward direction;

a third portion of cable extending in a downward direction; and

a fourth portion of cable extending in a second outward direction and connecting to said actuator.

41. A cable system as defined in claim 40, wherein said first, second, third and fourth portions are comprised of a continuous length of cable.

42. A cable system as defined in claim 40, wherein said first and second portions are oriented in a substantially horizontal orientation.

43. A cable system as defined in claim 40, wherein said second portion is oriented at a different angle than said fourth portion.

44. A cable system as defined in claim 40, wherein second portion is oriented approximately 45 degrees outward from said first portion.

45. A cable system as defined in claim 40, wherein said third portion is oriented in a substantially vertical position.

46. A cable system as defined in claim 40, wherein said fourth portion is oriented approximately 90 degrees outward from said third portion.

47. A cable system as defined in claim 40, wherein said fourth portion is oriented in a substantially horizontal position.

48. A cable system as defined in claim 40, wherein said fourth portion is oriented approximately 90 degrees outward from said first portion.

49. A cable system as defined in claim 40, wherein said second portion is oriented at a different angle from said fourth portion.

50. A cable system as defined in claim 40, wherein said third portion is oriented approximately 90 degrees downward from said second portion.

(51). A cable/pulley system for use in an exercise bench having a resistance engine, an arm assembly, an actuator, a fairlead, a top pulley, a corner pulley and an end pulley, said system comprising:

a first portion of cable connected to said resistance engine and extending in a rearward direction from said resistance engine to said fairlead;

a second portion of cable extending in a first outward direction from said fairlead to said top pulley;

a third portion of cable extending in a downward direction from said top pulley to said corner pulley;

a fourth portion of cable extending in a second outward direction from said corner pulley to said end pulley; and

a fifth portion of cable extending from said end pulley to said actuator.

52. A cable/pulley system as defined in claim 51, wherein said first, second, third, fourth and fifth portions of cable are comprised of a continuous length of cable.

53. A cable/pulley system as defined in claim 51, wherein said first and second portions of cable are oriented in a substantially horizontal orientation.

54. A cable/pulley system as defined in claim 51, wherein said second portion is oriented at a different angle than said fourth portion.

55. A cable/pulley system as defined in claim 51, wherein said second portion is oriented approximately 45 degrees outward from said first portion.

56. A cable/pulley system as defined in claim 51, wherein said third portion of cable is oriented in a substantially vertical position.

57. A cable/pulley system as defined in claim 51, wherein said fourth portion is oriented approximately 90 degrees outward from said third portion.

58. A cable/pulley system as defined in claim 51, wherein said fourth portion is oriented in a substantially horizontal position.

59. A cable/pulley system as defined in claim 51, wherein said fourth portion is oriented approximately 90 degrees outward from said first portion.

60. A cable/pulley system as defined in claim 51, wherein said second portion is oriented at a different angle from said fourth portion.

61. A cable/pulley system as defined in claim 51, wherein said third portion is oriented approximately 90 degrees downward from said second portion.

62. A cable/pulley system as defined in claim 51, wherein said resistance engine further comprises a spiral pulley. *for providing isotonic energy to the user.*

63. A cable/pulley system as defined in claim 51, wherein said fourth portion is located adjacent a horizontal support surface.

*A system for providing isotonic energy*  
(64.) An isotonic energy providing system for use in connection with an exercise bench comprising:

a resistance engine;

a constant load mechanism connected to said resistance engine;

a cable/pulley system connected to said resistance engine through said constant load mechanism such that when said cable/pulley system is utilized by a user, an approximately isotonic load is provided from said resistance engine to said user.

energy  
65. An isotonic energy providing system as claimed in claim 64, wherein said isotonic delivery mechanism is a spiral pulley.

66. An isotonic energy providing system for use in connection with an exercise bench as claimed in claim 65, wherein said spiral pulley further comprises a large radius, a small radius and a spiral track, said spiral track being adapted to receive a length of cable from said cable/pulley system, said length of cable being wrapped from said small radius within said spiral track and attached to said large radius.

67. An isotonic energy providing system for use in connection with an exercise bench as claimed in claim 64, wherein said isotonic load is approximately  $\pm 5$  pounds at a pre-load of zero on said resistance engine. spell out

68. An isotonic energy providing system for use in connection with an exercise bench as claimed in claim 64, wherein said isotonic load is approximately  $\pm 4$  pounds at a pre-load of approximately 14 pounds on said resistance engine.

69. An isotonic energy providing system for use in connection with an exercise bench as claimed in claim 64, wherein said isotonic load is approximately  $\pm 3$  pounds at a pre-load of approximately 37 pounds on said resistance engine.

70. An isotonic energy providing system for use in connection with an exercise bench as claimed in claim 64, wherein said isotonic load is approximately  $\pm 1$  pound at a pre-load of approximately 57 pounds on said resistance engine.

71. An isotonic energy providing system for use in connection with an exercise bench as claimed in claim 64, wherein said isotonic load is approximately  $\pm 10$  pounds at a pre-load of approximately 80 pounds on said resistance engine.